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Supplemental Information

Plasticizing Polysiloxane Tetraphenyl Borate – Li Single-ion Conductors with Non-Volatile Copolymers and Oligomers Containing Ethylene Oxide and Cyclic Carbonates

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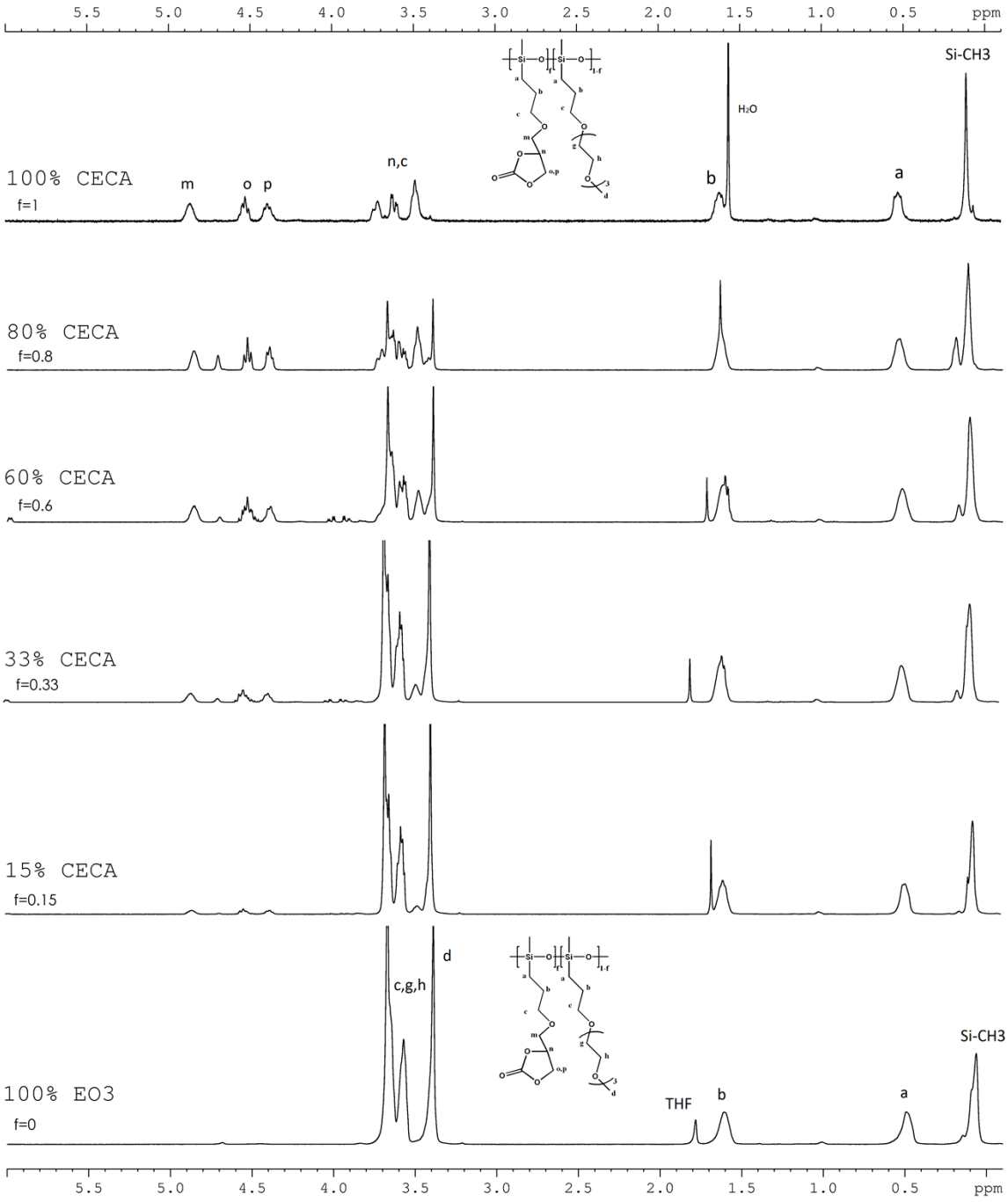

Figure S1. ^{1}H NMR of copolymer plasticizers.

Table S1. Compositions and molecular weights of copolymer plasticizers.

	CPP0	**CPP19**	**CPP31**	**CPP57**	**CPP80**	**CPP100**
f^{a}	0	18.4	29.8	56.5	79.6	100
f^{b}	0	19.5	32.4	58.8	79.9	100
M_n [c]	12700	12400	12200	11800	11400	11100

a. Calculated by the method using the integrated area of peaks a and d: $f = 2\left(a/2 - d/3\right)/a$.

b. Calculated by the method using the integrated area of peaks n and d: $f = o/\left(o + d/3\right)$.

c. Number-average molecular weight calculated from *f*, assuming number-average DP = 52 as suggested from ^{29}Si NMR of the polymethylhydrosiloxane in Figure S1.

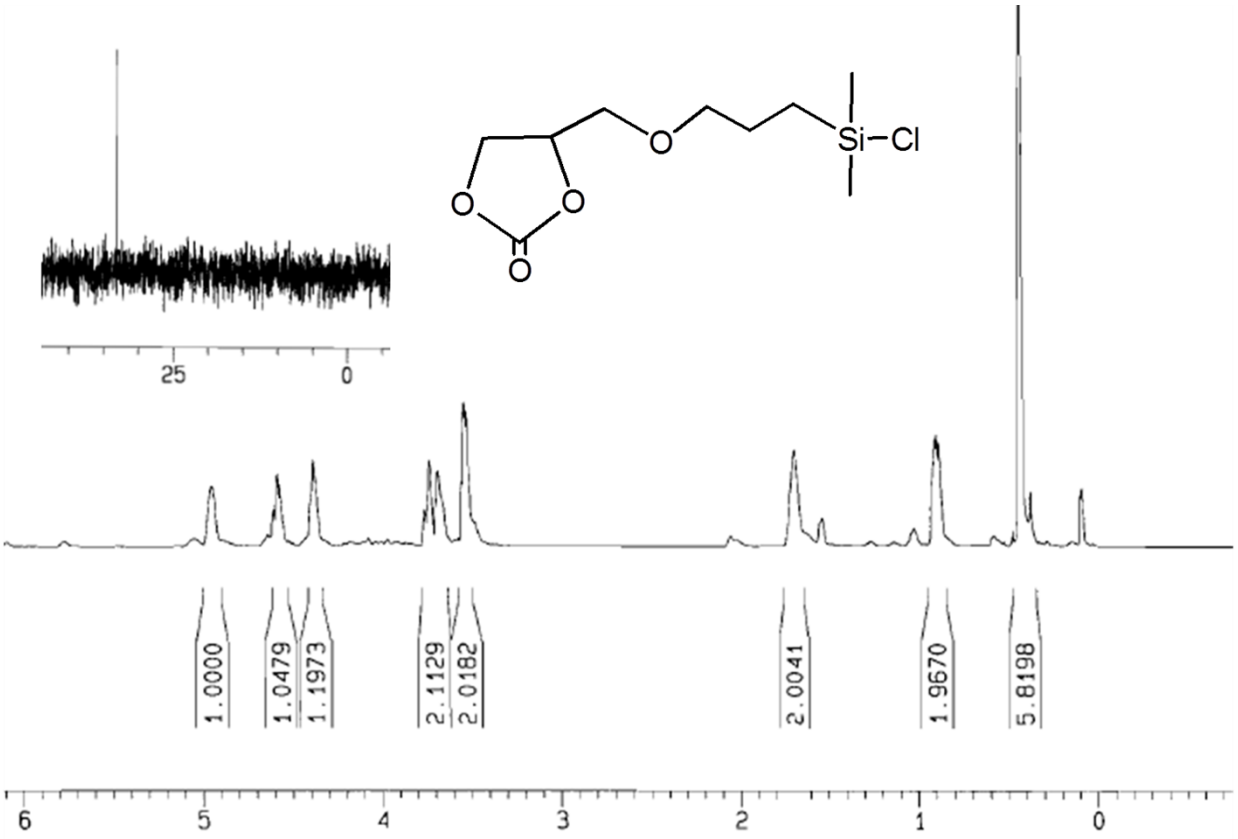

Figure S2. ^{1}H NMR of 4-((3-(chlorodimethylsilyl)propoxy)methyl)-1,3-dioxolan-2-one. Inset is ^{29}Si NMR with a single peak at 33 ppm relative to TMS.

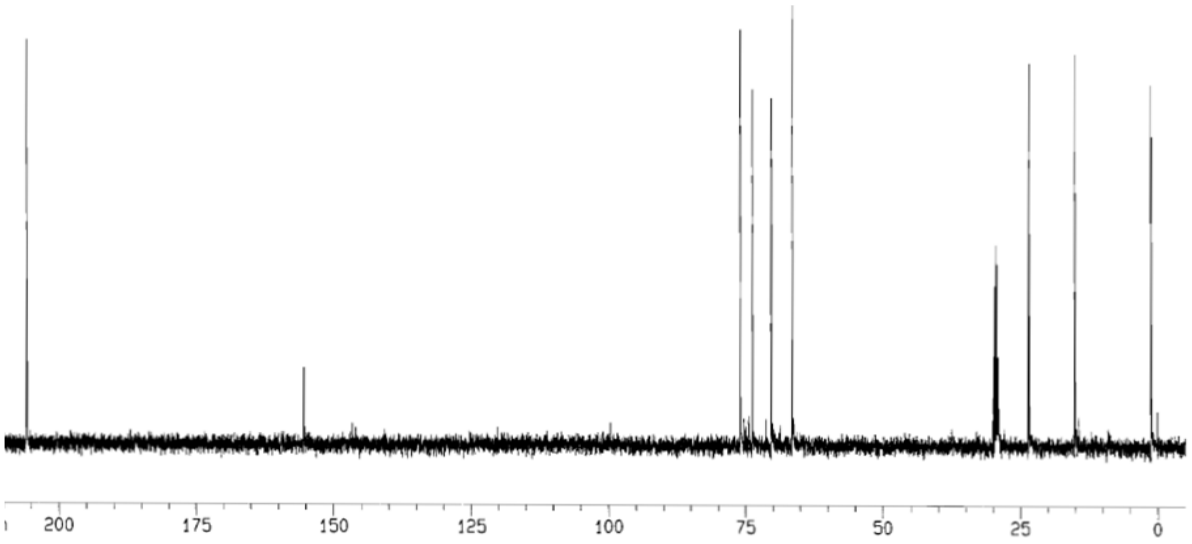

Figure S3. ^{13}C NMR of 4-((3-(chlorodimethylsilyl)propoxy)methyl)-1,3-dioxolan-2-one.

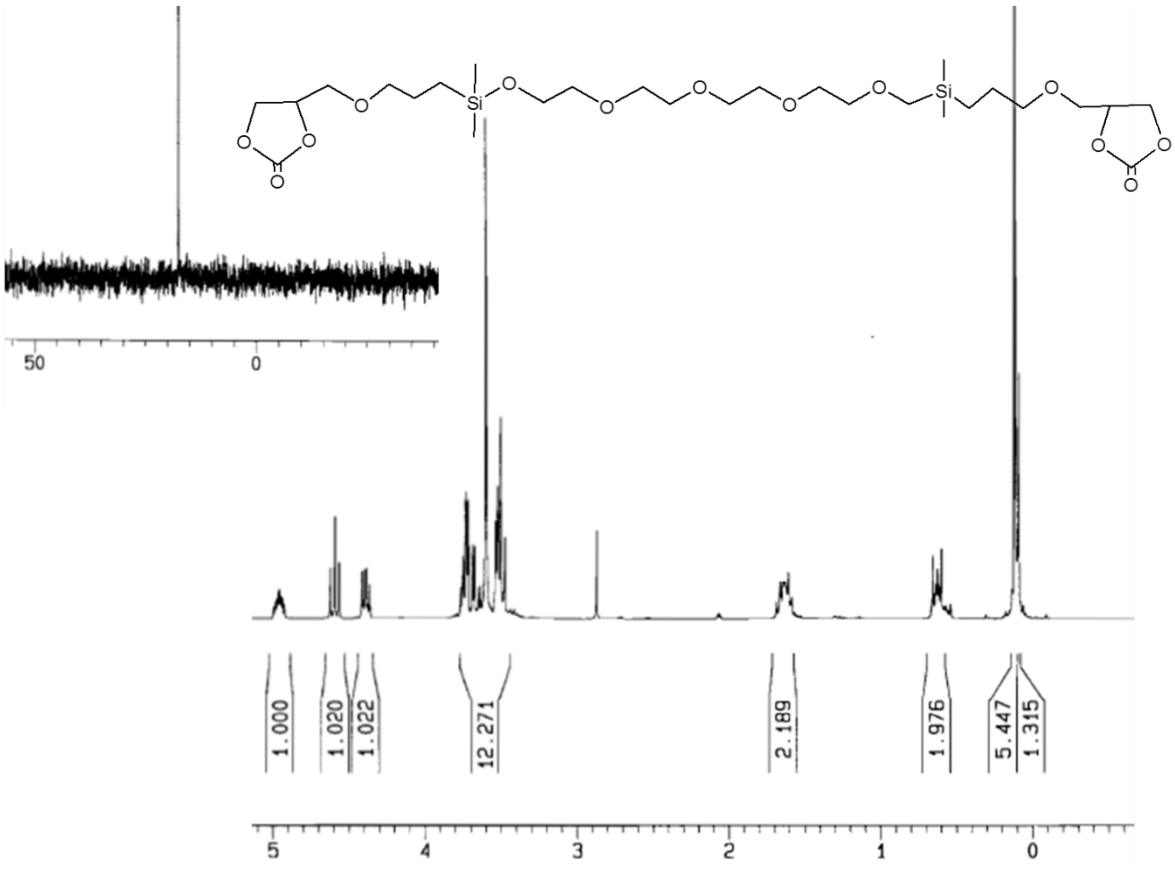

Figure S4. ^{1}H NMR of oligomeric plasticizer OP-62. Inset is ^{29}Si NMR with a peak at 18 ppm relative to TMS.

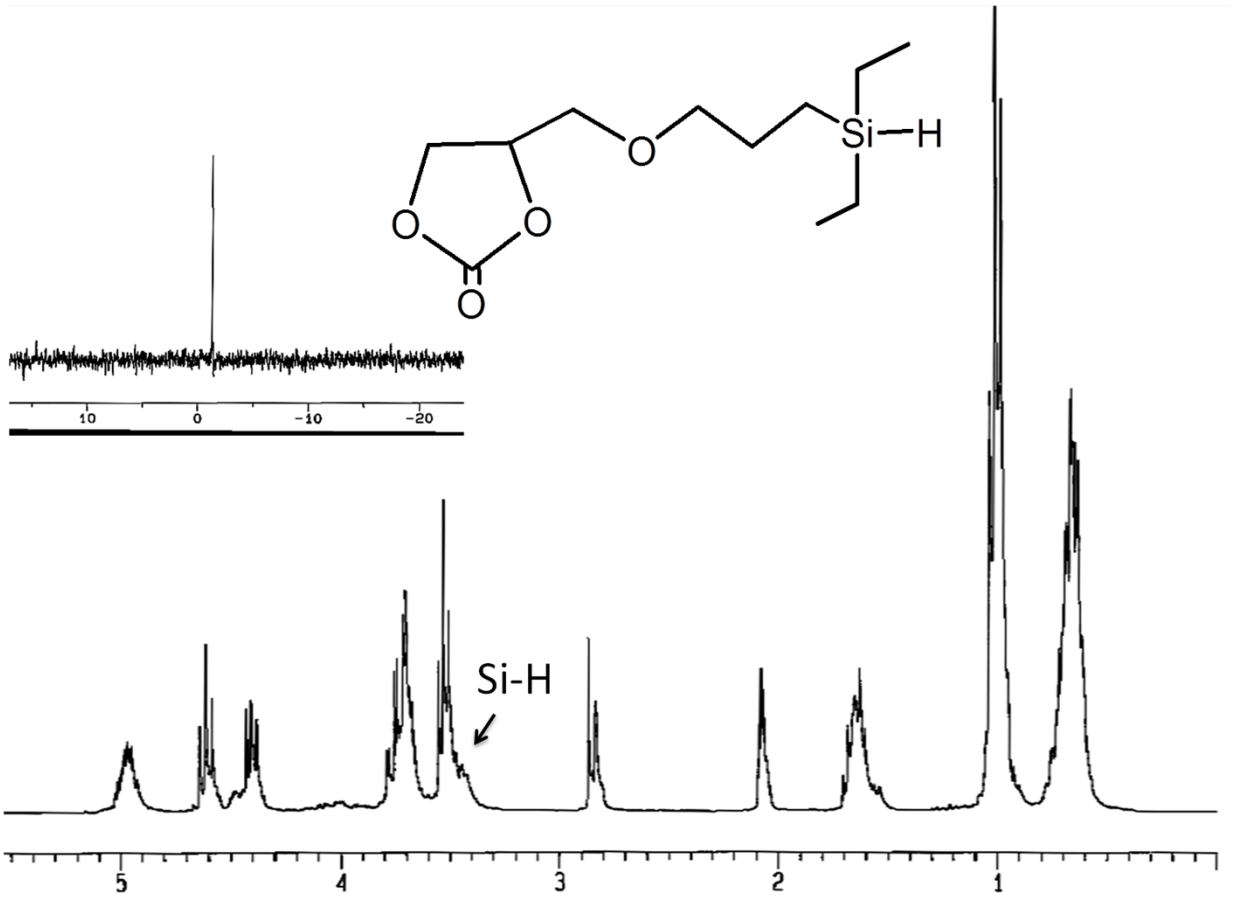

Figure S5. ^{1}H NMR of 4-((3-(diethylsilyl)propoxy)methyl)-1,3-dioxolan-2-one. Inset is ^{29}Si NMR with a peak at -1.8 ppm relative to TMS.

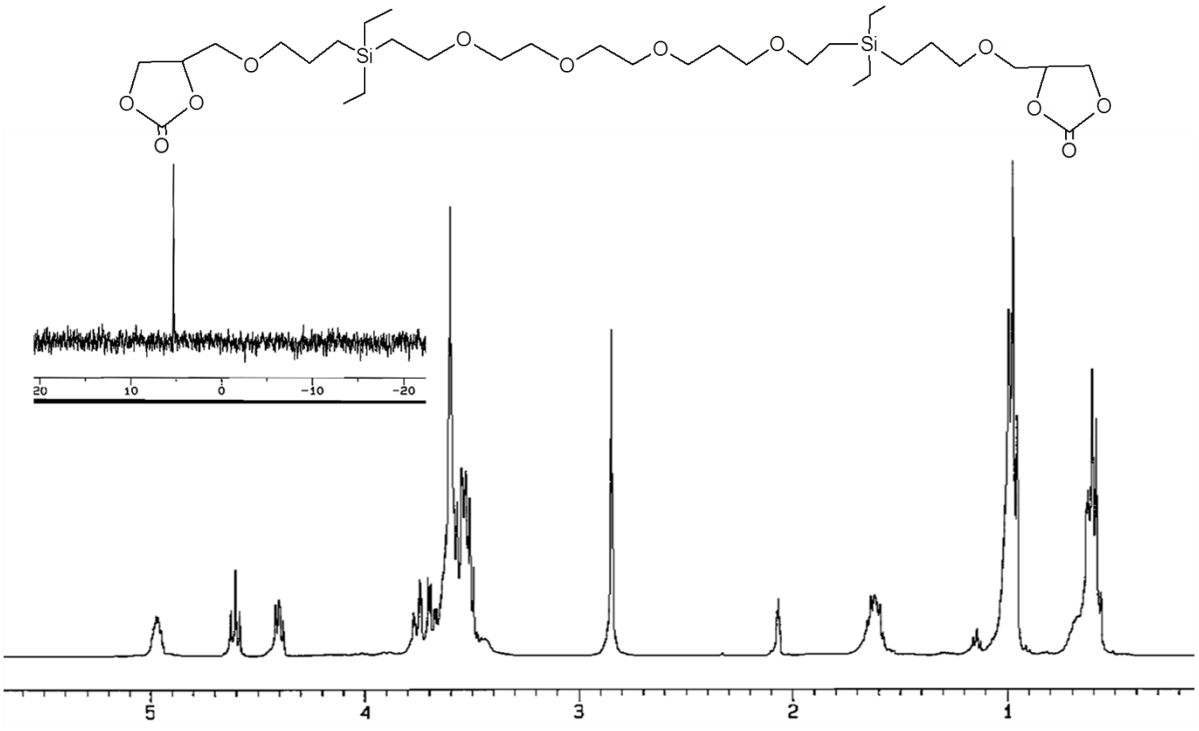

Figure S6. ^{1}H NMR of oligomeric plasticizer OP-73. Inset is ^{29}Si NMR with a peak at 5 PPM relative to TMS.

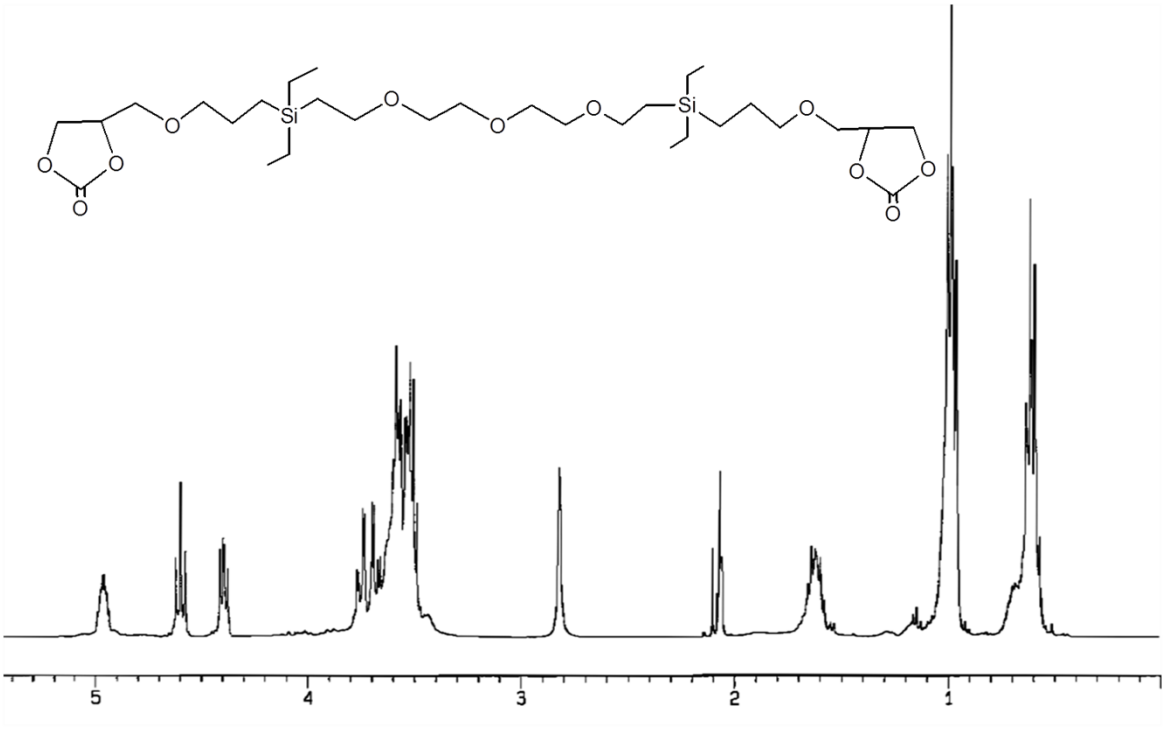

Figure S7. ^{1}H NMR of oligomeric plasticizer OP-67.

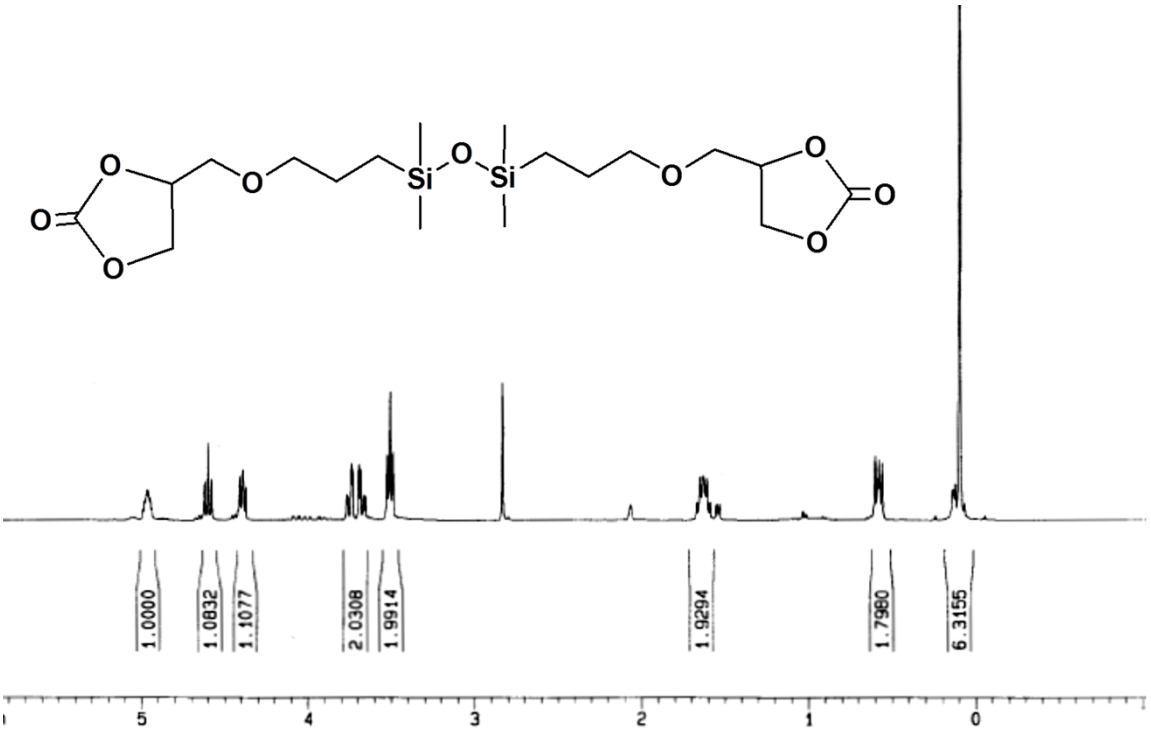

Figure S8. ^{1}H NMR of oligomeric plasticizer OP-89.

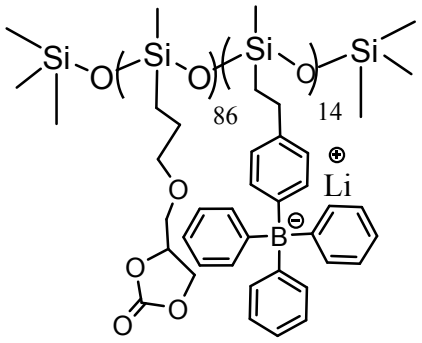

Figure S9. Structure of the 14 mol% borate random copolymer ionomer.